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EXAMINER
FORMAN, BETTY J

ART UNIT	PAPER NUMBER
1634	

DATE MAILED: 01/16/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/890,047	VO-DINH, TUAN	
	Examiner	Art Unit	
	BJ Forman	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *42-69* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *42-69* is/are rejected.

7)☒ Claim(s) *46* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☒ Interview Summary (PTO-413) Paper No(s). *9* .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. The Restriction Requirement of Paper No. 8 is withdrawn by the examiner in view of the discussion with Mr. Neil Jetter on 21 October 2002 as detailed on the attached Interview Summary.

Claims 42-69 are currently under prosecution.

Priority

2. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(a) as follows:

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)). Applicant is required to amend the first paragraph of the specification to cross-reference the PCT application.

3. Applicant's request for a corrected filing receipt of Paper No. 11, filed 30 September 2002 is acknowledged. Applicant request the filing date be changed from 04/29/02 to 07/25/01. However, as stated in the Decision of Paper NO. 6, mailed 19 August 2002 the correct filing date of the instant application is 29 April 2002. The decision notes that on 25

July 2001, applicant filed a transmittal letter for entry in to the national stage in the United States and further notes that on 29 April 2002 applicant completed the requirements for receiving a filing date. As such, the instant application was given a filing date of 29 April 2002.

Information Disclosure Statement

4. The references listed on the 1449 received 25 July 2001 have been reviewed and considered. Additionally, the International Search Report has been reviewed.

Specification

Abstract

5. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b).

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

An abstract on a separate sheet is required.

Disclosure

6. The amendment filed 28 January 2002 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The amendment to page 2, line 27 changes the term "species" to "diverse biotargets". The newly added "diverse biotargets" were not described or defined in the specification as filed.

The amendment to page 2, line 30, adds "diverse" before the phrase "biochemical species". The newly added "diverse biochemical species" were not described or defined in the specification as filed.

The amendment to page 3, line 18 changes the phrase "biological molecules" to "diverse biotargets". The newly added "diverse biotargets" were not described or defined in the specification as filed.

The amendment to page 4, line 22 changes the phrase "molecular species" to "diverse biotargets". The newly added "diverse biotargets" were not described or defined in the specification as filed.

The amendment to page 4, line 27 changes the phrase "different biological macromolecules" to "diverse macromolecule biotargets". The newly added "diverse macromolecule biotargets" were not described or defined in the specification as filed.

The amendment to page 13, line 22, adds "diverse" before the phrase "biochemical targets". The newly added "diverse biochemical targets" were not described or defined in the specification as filed.

The amendment to page 71, line 21, adds "diverse biotarget" before the phrase "type of macromolecule". The newly added "diverse biotarget type of macromolecule" were not described or defined in the specification as filed.

New Claim 42, from which all other claims depend, recites "a plurality of diverse targets". However, the originally filed specification does not describe or define the newly claimed "plurality of diverse targets".

Applicant stated on page 8 of the Preliminary Amendment that the amendments do not add new matter. However, Applicant did not point to portions of the originally filed specification for support for the newly added terms and phrases. Because the originally filed specification did not describe or define the newly added terms and phrases, the amendments constitute new matter.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

7. Claim 46 is objected to because "support" is misspelled.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

35 U.S.C. 112, first paragraph

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 42-69 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The recitation "diverse targets" is added to the newly added independent claim 42 (from which Claims 43-69 depend). The specification fails to define or provide any disclosure to support such claim recitation. The specification teaches "a plurality of species" and "multiple biochemical species" (page 2, lines 27 and 30), "multiple biological molecules" (page 30, line 18), "multiple molecular species" and different biological macromolecules" (page 4, lines 22 and 27), "multiple biomoleculear targets" (page 13, line 22), and "more than one type of macromolecule" (page 71, line 21). However, the specification does not teach, describe or define the newly added "diverse targets".

MPEP 2163.06 notes "IF NEW MATTER IS ADDED TO THE CLAIMS, THE EXAMINER SHOULD REJECT THE CLAIMS UNDER 35 U.S.C. 112, FIRST PARAGRAPH - WRITTEN DESCRIPTION REQUIREMENT. *IN RE RASMUSSEN*, 650 F.2D 1212, 211 USPQ 323 (CCPA 1981)." MPEP 2163.02 teaches that "Whenever the issue arises, the fundamental factual inquiry is whether a claim defines an invention that is clearly conveyed to those skilled in the art at the time the application was filed...If a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, involving a departure from, addition to, or deletion from the disclosure of the application as filed, the examiner should conclude that the claimed subject matter is not described in that application." MPEP 2163.06 further notes "WHEN AN AMENDMENT IS FILED IN REPLY TO AN OBJECTION OR REJECTION BASED ON 35 U.S.C. 112, FIRST PARAGRAPH, A STUDY OF THE

ENTIRE APPLICATION IS OFTEN NECESSARY TO DETERMINE WHETHER OR NOT "NEW MATTER" IS INVOLVED. *APPLICANT SHOULD THEREFORE SPECIFICALLY POINT OUT THE SUPPORT FOR ANY AMENDMENTS MADE TO THE DISCLOSURE*" (emphasis added).

35 U.S.C. 112, second paragraph

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 42-69 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claims 42-69 are indefinite in Claim 42 for the recitation "detection channels" because it is unclear whether the "channels" define structural limitations of the platform or functional means for detection e.g. electrodes, light sources and etc. It is suggested that Claim 42 be amended to define the structural limitations of the biosensor system as described in the specification.

b. Claim 46 is indefinite for the recitation "group consisting of a substrate, a filter and a membrane connected between said plurality of receptors and integrated circuit" because it is unclear whether "connected between said plurality of receptors and integrated circuit" modifies only the membrane or also modifies the substrate and filter. It is suggested that Claim 46 be amended to clarify.

c. Claim 47 is indefinite for the recitation "is operable to filter certain wavelength of electromagnetic radiation" because it is unclear what structural limitations are being imposed

on the solid support. It is suggested that Claim 47 be amended to define the structural limitations of the support.

d. Claim 50 is indefinite for the recitation "said molecular probe" because the recitation lacks proper antecedent basis in Claim 49. It is suggested that Claim 50 be amended to provide proper antecedent basis e.g. replace "molecular" with "receptor".

e. Claim 51 is indefinite for the recitation "said biomimetic" because the recitation lacks proper antecedent basis in Claim 49. It is suggested that Claim 51 be amended to provide proper antecedent basis e.g. replace "biomimetic" with "receptor probe".

f. Claim 51 is further indefinite for the recitation "comprises a molecular imprint PNA or a cyclodextrin probe" because it is unclear whether "molecular imprint" modifies both "PNA" and "cyclodextrin probe" and because it is unclear whether "probe" modifies both "PNA" and "cyclodextrin". The recitation is further indefinite because "molecular imprint" is not defined in the claim or the specification. Therefore, the meaning of "molecular imprint" in not understood in the context of the claim. It is suggested that Claim 51 be amended to clearly define the limitations of the PNA and/or probes.

g. Claims 57 is indefinite because it is unclear whether "on-chip" modifies only the signal amplification system or modifies both the signal amplification and signal processing system. It is suggested that Claim 57 be amended to clarify.

h. Claim 58 is indefinite for the recitation "said signal amplification system" because the recitation lacks proper antecedent basis in the "on-chip signal amplification system" of Claim 57. It is suggested that Claim 58 be amended to provide proper antecedent basis.

i. Claim 68 is indefinite because the claim is drawn to a method of simultaneous detection of a plurality of diverse targets, but the claim does not recite method steps of target detection. While the claim recites a method step for detecting output signal from a receptor which is **indicative** of at least one target, the claim does not recite method steps for detection of a target, detection of a plurality of targets or simultaneous detection of a plurality of targets.

It is suggested that Claim 68 be amended to recite method steps for simultaneous detection of a plurality of targets as claimed.

j. Claim 69 is indefinite because the claim is drawn to a method for detecting of a plurality of pathogens, but the claim does not recite method steps of pathogen detection. While the claim recites a method step for generating an output signal from a receptor, the claim does not recite method steps for detection of a pathogen or detection of a plurality of pathogens. It is suggested that Claim 69 be amended to recite method steps for detecting of a plurality of pathogens as claimed.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 42-50 and 52-69 are rejected under 35 U.S.C. 102(e) as being anticipated by Wohlstadter et al (U.S. Patent No. 6,207,369, filed 17 September 1996).

Regarding Claim 42, Wohlstadter et al disclose an integrated biosensor system for the simultaneous detection of a plurality of diverse targets, the system comprising: at least one sampling platform including a plurality of receptors, said receptors including at least one

protein receptor and at least one nucleic acid receptor (Column 24, lines 52-67) and an integrated circuit detector system having a plurality of detection channels (i.e. light detectors) for detecting electromagnetic signals related to binding events occurring at said plurality of receptors said detection channels each including at least one detector (Column 14, lines 10-24 and Column 14, line 45-Column 15, line 63).

Regarding Claim 43, Wohlstadter et al disclose the biosensor wherein the sampling platform comprises a solid support (Column 14, line 45-Column 15, line 63).

Regarding Claim 44, Wohlstadter et al disclose the biosensor wherein said plurality of targets include at least one selected from the group consisting of a bacterium, a fungus, a virus and a eukaryotic microorganism (Column 51, lines 8-16).

Regarding Claim 45, Wohlstadter et al disclose the biosensor wherein said plurality of targets include at least one selected from the group consisting of a polynucleotides, polypeptides and peptides (Column 51, lines 8-16).

Regarding Claim 46, Wohlstadter et al disclose the biosensor wherein said solid support comprises at least one selected from the group consisting of a substrate, a filter and a membrane connected between said plurality of receptors and integrated circuit (Column 15, lines 39-63).

Regarding Claim 47, Wohlstadter et al disclose the biosensor wherein said solid support comprises at least one selected from the group consisting of a substrate, a filter and a membrane connected between said plurality of receptors and integrated circuit (Column 15, lines 39-63). Wohlstadter et al disclose the support filters light (Column 10, lines 8-11).

However, the recitation "is operable to filter certain wavelengths of electromagnetic radiation" is functional language. The courts have stated that claims drawn to an apparatus must be distinguished from the prior art in terms of structure rather than function see *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d

1464, 1469, 15 USPQ2d 1525,1528 (Fed. Cir. 1990) (see MPEP, 2114). Because the courts have stated that an apparatus must be distinguished in terms of structure; because the recitation "is operable...." is a functional, not a structural limitation; and because Wohlstadter et al disclose the structural limitations, Wohlstadter et al disclose the biosensor of Claim 47.

Regarding Claim 48, Wohlstadter et al disclose the biosensor wherein said solid support comprises an optical filter (Column 10, lines 8-11).

Regarding Claim 49, Wohlstadter et al disclose the biosensor wherein said receptor probes comprises a cell receptor i.e. the receptor is a binding reagent for a cell (Column 24, lines 22-29).

Regarding Claim 50, Wohlstadter et al disclose the biosensor wherein said molecular probe comprises a bioreceptor i.e. antibody (Column 24, lines 52-67).

Regarding Claim 52, Wohlstadter et al disclose the biosensor further comprising at least one excitation source selected from the group consisting of light emitting diode and diode array (Column 29, lines 40-59).

Regarding Claim 53, Wohlstadter et al disclose the biosensor wherein said excitation source is disposed on chip i.e. "positioned on...the binding surface" (column 29, lines 50-57).

Regarding Claim 54, Wohlstadter et al disclose the biosensor wherein said excitation source is disposed off chip i.e. "positioned...adjacent to the binding surface" (column 29, lines 50-57).

Regarding Claim 55, Wohlstadter et al disclose the biosensor wherein the detection channels include a photodetector (Column 29, lines 40-59).

Regarding Claim 56, Wohlstadter et al disclose the biosensor wherein the photo detector is selected from the group consisting of a photodiode, avalanche photodiode and a phototransistor (Column 29, lines 40-45).

Regarding Claim 57, Wohlstadter et al disclose the biosensor further comprising a single processing system (Column 47, liens 31-36).

Regarding Claim 58, Wohlstadter et al disclose the single processing system comprises a microprocessor (Column 47, liens 31-36).

Regarding Claim 59, Wohlstadter et al disclose the biosensor wherein the detector channels further comprise a low-pass filter (Column 30, lines 8-36 and Column 60, lines 34-38).

Regarding Claim 60, Wohlstadter et al disclose the biosensor wherein the plurality of receptors are tagged with a label that responds to incident electromagnetic radiation by emitting electromagnetic response, each response having a different frequency (Column 29, lines 45-48 and Column 60, lines 30-38).

Regarding Claim 61, Wohlstadter et al disclose the biosensor wherein the electromagnetic responses are selected from the group consisting of luminescence scattering, infrared absorption and ultraviolet absorption (Column 29, lines 49-51).

Regarding Claim 62, Wohlstadter et al disclose the biosensor wherein the receptors respond to the electromagnetic irradiation by radiating a luminous signal i.e. visible light (Column 29, lines 49-51).

Regarding Claim 63, Wohlstadter et al disclose the biosensor wherein the luminous signal is visible light (Column 29, lines 49-51).

Regarding Claim 64, Wohlstadter et al disclose the biosensor wherein the polynucleotides comprises at least one selected from the group of DNA, PNA and RNA (Column 24, lines 40-67).

Regarding Claim 65, Wohlstadter et al disclose the biosensor wherein the detection channels (i.e. detection means) further comprises an amplifier e.g. photomultiplier tube (Column 29, lines 42-45).

Regarding Claim 66, Wohlstadter et al disclose the biosensor wherein said detection channels include optical detectors and amplifiers being integrated on a single circuit i.e. the detectors are positioned on the binding surface (Column 29, lines 51-59).

Regarding Claim 67, Wohlstadter et al disclose the biosensor wherein the plurality of detection channels comprises an array of amplifier photodiodes (Column 29, lines 42-45 and 60-65).

Regarding Claim 68, Wohlstadter et al disclose a method for the simultaneous detection of a plurality of diverse targets in a sample comprising: contacting an integrated circuit of Claim 42 with a sample and detecting for the presence of output signals from the receptors wherein the presence of output signal is indicative of at least one of the diverse targets (Column 14, lines 10-24; Column 24, lines 52-67; and Example 6.37, Column 90, line 45-Column 91, line 20).

Regarding Claim 69, Wohlstadter et al disclose a method for detecting of a plurality of different pathogens (e.g. Hepatitis B virus and Hepatitis C virus) in a sample comprising: contacting an integrated circuit of Claim 42 with a sample wherein one or more of the receptors is specific for each of said pathogens and generating an output signal from each of said receptors when said pathogens are present in the sample (Column 14, lines 10-24; Column 24, lines 52-67; and Example 6.37, Column 90, line 45-Column 91, line 20).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claim 51 is rejected under 35 U.S.C. 103(a) as being obvious over Wohlstadter et al (U.S. Patent No. 6,207,369, filed 17 September 1996) in view of Egholm et al (Nature, 1993, 365: 566-567).

Regarding Claim 51, Wohlstadter et al teaches the integrated biosensor system for the simultaneous detection of a plurality of diverse targets, the system comprising: at least one sampling platform including a plurality of receptors, said receptors including at least one protein receptor and at least one nucleic acid receptor (Column 24, lines 52-67) and an integrated circuit detector system having a plurality of detection channels (i.e. light detectors) for detecting electromagnetic signals related to binding events occurring at said plurality of receptors said detection channels each including at least one detector (Column 14, lines 10-24 and Column 14, line 45-Column 15, line 63) wherein said receptor probes comprises a receptor probe (Column 24, lines 22-29) and wherein the probes comprises nucleic acid analogues having modified backbones known in the art (Column 24, lines 40-51) which clearly suggest PNA probes but they do not specifically teach the nucleic acid analogues are PNA.

As stated above, the limitations of Claim 51 are indefinite because it is unclear what "molecular imprint" and "probe" modify and because the meaning of "molecular imprint" in unclear. For purposes of examination, the claim is interpreted as being drawn to a PNA probe or cyclodextrin probe.

PNA probes were well known in the art at the time the claimed invention was made as taught by Egholm et al who teach that PNAs are nucleic acid analogs comprising modified backbone and that probes comprising PNA exhibit increased thermal stability during hybridization to DNA (page 567, right column, first paragraph). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the probes of Wohlstadter et al with PNA analogues as they suggest for the expected benefit of obtaining

increased thermal stability during hybridization as taught by Egholm et al (page 567, right column, first paragraph).

Double Patenting

16. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

17. Claims 42-69 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,197,503 in view of Wohlstadter et al (U.S. Patent No. 6,207,369, filed 17 September 1996). Both sets of claims are drawn to an integrated circuit comprising a sampling platform including a plurality of receptors and an integrated circuit detector system for detecting electromagnetic signals related to binding events occurring at the receptors. The claims differ only in the patent claims are drawn to "probes that bind to a target biomolecule selected from a nucleic acid, antibody, enzyme polypeptide or peptide while the instant claims are drawn to receptors consisting of both at least one protein and at least one nucleic acid which bind to targets selected from nucleic acid, antibody, enzyme polypeptide or peptide (Claim 3). While the patent claims do

not claim the probes are both proteins and nucleic acids, both patent probes and the instant receptors bind to similar targets. Additionally, Wohlstadter et al teach a motivation to utilize both protein and nucleic acid probes (receptors) i.e. facilitates the binding analysis of multiple and different analytes (Column 24, lines 52-59). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the patent probes by utilizing both protein and nucleic acid probes (receptors) as instantly claimed for the expected benefit of facilitating the binding analysis of multiple and different analytes as taught by Wohlstadter et al (Column 24, lines 52-59).

18. Claims 42-69 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-45 of U.S. Patent No. 6,448,064 in view of Wohlstadter et al (U.S. Patent No. 6,207,369, filed 17 September 1996). Both sets of claims are drawn to an integrated circuit comprising a sampling platform including a plurality of receptors and an integrated circuit detector system for detecting electromagnetic signals related to binding events occurring at the receptors. The claims differ only in the patent claims are drawn to "sensing element for selectively combining with target biomolecules" wherein the sensing element is selected from a receptor, a polymer, a biopolymer, biomimetic, an antibody, an enzyme a molecular print assay or a nucleic acid (Claim 11) while the instant claims are drawn to receptors consisting of at least one protein and at least one nucleic acid which bind to targets selected from nucleic acid, antibody, enzyme polypeptide or peptide. While the patent claims do not claim the sensing elements are both proteins and nucleic acids, both patent sensing elements and the instant receptors are selected from proteins and nucleic acids and bind to similar targets. Additionally, Wohlstadter et al teach a motivation to utilize both protein and nucleic acid probes (receptors) i.e. facilitates the binding analysis of multiple and

different analytes (Column 24, lines 52-59). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the patent sensing elements by utilizing both protein and nucleic acid sensing elements (receptors) as instantly claimed for the expected benefit of facilitating the binding analysis of multiple and different analytes as taught by Wohlstadter et al (Column 24, lines 52-59).

Prior Art

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Zebala (U.S. Patent No. 6,159,681, issued 12 December 2000) discloses a biosensor comprising a sample platform including a plurality of receptors and an integrated circuit detector having detection channels for detecting electromagnetic signals (Column e, line 26-Column 5, line 4).

Conclusion

20. No claim is allowed.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878. The examiner can normally be reached on 6:30 TO 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (703) 308-1152. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

BJ Forman, Ph.D.
Patent Examiner
Art Unit: 1634
January 7, 2003